Overlapping Syllable Segments with Length N	Examples
S(N), N=1	$(s_1)\ (s_2)\ \ldots(s_{10})$
S(N), N=2	$(s_1\ s_2)\ (s_2\ s_3)\ldots(s_9\ s_{10})$
S(N), N=3	$(s_1\ s_2\ s_3)\ (s_2\ s_3\ s_4)\ldots(s_8\ s_9\ s_{10})$
S(N), N=4	$(s_1\ s_2\ s_3\ s_4)\ (s_2\ s_3\ s_4\ s_5)\ldots(s_7\ s_8\ s_9\ s_{10})$
S(N), N=5	$(s_1\ s_2\ s_3\ s_4\ s_5)\ (s_2\ s_3\ s_4\ s_5\ s_6)\ldots(s_6\ s_7\ s_8\ s_9\ s_{10})$
Syllable Pair Separated by *n* Syllables	Examples
$P_s(n)$, n=1	$(s_1\ s_3)\ (s_2\ s_4)\ \ldots(s_8\ s_{10})$
$P_s(n)$, n=2	$(s_1\ s_4)\ (s_2\ s_5)\ \ldots(s_7\ s_{10})$
$P_s(n)$, n=3	$(s_1\ s_5)\ (s_2\ s_6)\ \ldots(s_6\ s_{10})$
$P_s(n)$, n=4	$(s_1\ s_6)\ (s_2\ s_7)\ \ldots(s_5\ s_{10})$

FIG. 1

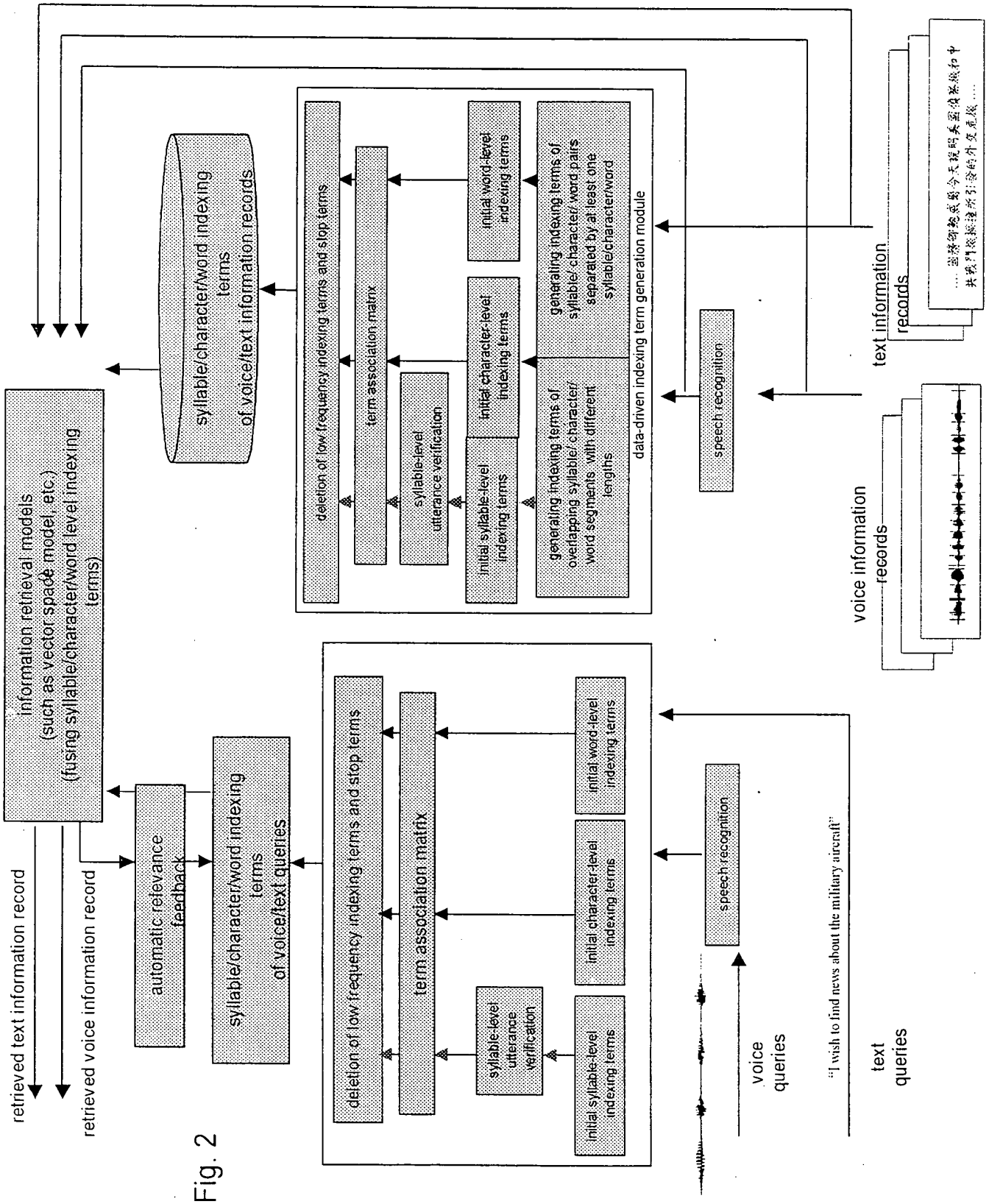
information retrieval models
(such as vector space model, etc.)
(fusing syllable/character/word level indexing terms)
retrieved text information record
retrieved voice information record
automatic relevance feedback
syllable/character/word indexing terms
of voice/text queries
deletion of low frequency indexing terms and stop terms
term association matrix
initial word-level indexing terms
initial character-level indexing terms
syllable-level utterance verification
initial syllable-level indexing terms
speech recognition
voice queries
"I wish to find news about the military aircraft"
text queries
data-driven indexing term generation module
generating indexing terms of overlapping syllable/ character/ word segments with different lengths
generating indexing terms of syllable/ character/ word pairs separated by at least one syllable/character/word
voice information records
text information records
syllable/character/word indexing terms
of voice/text information records

Fig. 2